Siyuan Tang (唐思远)
Email: tang211061@mail.ustc.edu.cn CN Tel: (+86)18956221183

Education

University of Science and Technology of China (USTC) Hefei, China
Bachelor of Science in Statistics Sep. 2021- Jun. 2025

- GPA: 4.00/4.3
- Weighted average: 91.8/100
- Ranking: 2nd in the Department of Statistics and Finance

Core course grades

Statistics:

- Nonparametric Statistics (100)
- Regression Analysis (100)
- Multivariate Analysis A (96)
- Categorical Data Analysis (100)
- Fundamentals of Statistical Algorithm (92)
- Machine Learning (92)
- Probability (95)
- Mathematical Statistics (90)
- Applied Statistical Software (90)
- Introduction to Deep Learning[1] (98)

Mathematics:

- Real Analysis (93)
- Complex Analysis[2] (90)
- Functional Analysis (91)
- Convex Optimization (92)
- Introduction to Differential Equations with Applications (90)
- Mathematical Analysis B1 and B2 (91 and 90)
- Linear Algebra B1 and B2 (90 and 90)

Physics[3]: Mechanics A (97), Thermotics A (90), Electromagnetism A (97)

Research Interests

Future statisticians should have the ability to conduct end-to-end research, from data collection and preprocessing to model development, goodness-of-fit assessments, performance evaluation, and ultimately, communicating findings in ways that are impactful for real-world applications.

Specially, I wish to find statistical models which are both realistic and mathematically tractable, solving real-world problems with theoretical guarantees.

- High-dimensional statistics
- Nonparametric statistics
- Statistical network analysis

[1] An elective course for statistics undergraduates taught by the School of Artificial Intelligence and Data Science at USTC.

[2] In my official transcript, this course title is translated as "Complex Variable". However, the correct translation is "Complex Analysis".

[3] Although Siyuan Tang's major is statistics, he has taken some physics courses designed for physics undergraduates. They are included here because physics courses typically require advanced mathematical skills.

Research Experiences

A Novel Approach to Solar Flare Forecasting: Energy-Based Prediction and Classification Using SHARP[4] Parameters [Paper in Preparation] Jul. 2024 - Present
Advisor: Assistant Professor Yang Chen (Department of Statistics, University of Michigan)

- Developed a data-driven modeling strategy for flare trajectories and performed goodness-of-fit assessments, including tests of correlation and normality.
- Proposed an energy-based identification method, achieving improved classification performance measured by the True Skill Statistic for strong flare events.
- Transformed the two-step framework (energy regression + threshold optimization) into a one-step approach by using a sigmoid function to approximate the indicator function.

Minimum Variance Portfolio (MVP) Estimation with Sparsity Mar. 2023 - Sep. 2023
Advisor: Associate Professor Bo Zhang (Department of Statistics and Finance, USTC)

- Learned a polynomial-time algorithm for best-subset selection problem from an existing paper.
- Developed a new algorithm to fit into the MVP problem with a given support size, and implemented it in R using parallel computing.
- Compared the predicted risk and actual risk and explored the effectiveness in both low and high dimensions.

Skills

Programming: Python, R, C
Typesetting: LaTeX, Markdown

Language

TOEFL: Total 103 (Reading 25, Listening 28, Speaking 24, Writing 26)
GRE general: Verbal 153 (55%) + Quantitative 170 (92%) + Analytical Writing 3.0 (16%)

Honors and Awards

Outstanding Student Scholarship 3 times (2022, 2023, and 2024)

[4]SHARP stands for Space-weather Helioseismic and Magnetic Imager Active Region Patches, a dataset used in solar physics.